

Ault Food Limited

Winchester, Ontario

“Ault Food in Winchester is committed to being the most cost effective dairy plant in the industry. The company also understands that good environmental performance is good business and we have focused considerable effort on reducing waste and increasing energy efficiency. As with quality improvement, the results of this effort usually are better products, lower operating costs and a competitive edge. The green analysis of our plant helped us to identify opportunities and take action to achieve these results.”

Patrick Timmons
Senior Operations Manager
Ault Food Ltd.
Winchester, Ontario



Milk receiving at the Winchester plant.

THE COMPANY

Ault Food's dairy plant in Winchester, Ontario, makes butter, cheese, condensed milk, milk powder and whey. The plant is typical of many in the Ontario dairy sector.

Ault Food has a proactive environmental policy and is committed to using energy, water and materials efficiently, reducing packaging and other solid wastes, minimizing effluent and improving the quality of its wastewater.

The Winchester plant has a manager responsible for environmental affairs and the plant's goal is to improve productivity without adversely affecting the environment. Ault Food was one of the first companies to recognize the potential benefits of a green industrial analysis.

CHALLENGE

In December 1994, Ault Food and the Ministry of Environment and Energy retained consultants from Proctor & Redfern to conduct a green industrial analysis of the Winchester plant. The aim of the analysis was to find ways to reduce the use of energy and water and the amount of effluent and waste. The plant management could then set priorities and plan

capital and operational projects to use resources more efficiently and to protect the environment.

OPPORTUNITIES

Even though Ault knew the potential benefits of pursuing green opportunities, the consultant's help was needed to select viable projects to implement. Evaporators, pasteurizers, separators, clean-in-place systems, regeneration of demineralizer resins, electrodialysis and biological treatment of effluent were identified as key areas for resource conservation and pollution prevention at the facility. The analysis focused on the following goals:

- ✧ reduce consumption of water and the need to haul water to the facility in particular;
- ✧ prevent the loss of product to the waste system and reduce the biological oxygen demand (BOD) of the effluent streams;
- ✧ improve the efficiency of the refrigeration system;

- ✧ make the steam system more efficient;
- ✧ recover and recycle caustic and acid chemicals cost effectively.

RECOMMENDATIONS

The major recommendations from the green analysis report are listed below. The simple payback periods for these projects vary from immediate to 4.5 years.

- ✧ replace water hauled from outside of the plant with treated water from an on-site well;
- ✧ prevent the waste of raw cream by installing an Optic Sensor to provide automatic cutoff of flush water to the cream delivery line. This would also reduce the BOD in discharged effluent;
- ✧ conserve water by reducing water flow to pump seals, recovering condensate and improving water management;

- ✧ reduce energy consumption in refrigeration systems by improving chilled water pumps, lines, compressors and control devices;
- ✧ recover heat from the boiler exhaust gas with two stage heat exchange systems;
- ✧ recover salt whey product using an existing milk separator – this would also reduce the BOD in discharged effluent;
- ✧ recover and reuse caustic in cleaning and demineralization operations.

These improvements could also be made by other dairy plants in Ontario.

Some of the technologies identified for business development opportunities in the dairy sector were condensing heat recovery (such as the flue-ace system), ultra-filtration, Optic Sensors and a milk separator for salt whey recovery.

POTENTIAL SAVINGS

The recommended improvements would result in the following estimated annual savings at the Winchester plant:

Energy	\$263,000
Water	347,230
Effluent charge	16,470
Chemicals	28,260
Feed materials and products	289,900
Total	\$944,860

A capital expenditure of about \$1,675,240 would be needed to make these savings.

The consultants also recommended a co-generation plant for the facility. This would cost \$730,000 with a pay-back of 3.5 years.

PARTNERSHIP IN POLLUTION PREVENTION AND RESOURCE CONSERVATION

Industrial companies doing business in Ontario may seek ministry/industry services that will help them to:

- ✧ use energy and water more efficiently;
- ✧ reduce, reuse and recycle solid waste;
- ✧ reduce or eliminate liquid effluent and gaseous emissions.

Equipment and services supply companies can benefit from the information provided on technologies identified for business development.

FOR FURTHER INFORMATION, PLEASE CONTACT:

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MINISTRY OF ENVIRONMENT AND ENERGY SERVICES

For information on Ministry of Environment and Energy assistance to industry, please contact the Industry Conservation Branch at (416) 327-1492, Fax (416) 327-1261

This project profile was prepared and published as a public service by the Ontario Ministry of Environment and Energy. Its purpose is to transfer information to Ontario companies about findings and recommendations of a resource conservation and environmental analysis conducted by a consulting engineering firm at an industrial plant in Ontario.

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